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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,523	03/24/2006	Thomas W Hodge	6395-66741-06	8826

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KLARQUIST SPARKMAN, LLP  
121 S.W. SALMON STREET  
SUITE 1600  
PORTLAND, OR 97204

EXAMINER

BOESEN, AGNIESZKA

ART UNIT

PAPER NUMBER

1648

MAIL DATE

DELIVERY MODE

06/05/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/535,523

**Applicant(s)**

HODGE ET AL.

**Examiner**

Agnieszka Boesen

**Art Unit**

1648

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6, 9, 12, 15-41, 43-60, 63, 64, 67 and 68 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-6, 9, 12, 15-41, 43-60, 63, 64, 67 and 68 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions, which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

1. Claims 1-6, 9, 12, 15-41, 51-59 and 68 encompass multiple groups of distinct inventions wherein each invention is drawn to a method of decreasing infection of a host cell by a virus comprising interfering with an activity or expression of **one of the host proteins** listed in claim 1. Claim 1 lists 112 distinct proteins (it is noted that some of the proteins comprise two or more different species, for example POM and POMZP3 are considered to be two species of one genus of proteins). Additionally, claims 2, 3, 15, 16-20, 29, 31, 33, 36, and 40 recite **SEQ ID NOs: 1-232**, representing the nucleic acids encoding host proteins recited in claims 1, 6, 9, and 12. Claims 6, 9, 12, 29, 31, and 40 recite viruses: **HIV, Ebola, and influenza**. Claims 24, 25 and 41 recite agents that are used to interfere with the activity of the host proteins: **a transposon, siRNA and an anti-protein binding agent**. Claim 68 recites sequences being administered in the present method **SEQ ID NO: 246-845**.

1. Restriction is required between the host proteins; Applicant is required to elect **one host cell protein** from the host cell proteins listed in claims 1, 6, 9, and 12.

2. Restriction is required between SEQ ID NO: 1-232; Applicant is required to elect **one nucleic acid sequence** that encodes the elected host protein, from SEQ ID NO: 1-232 recited in claims 1, 6, 9, and 12.
3. Restriction is required between the viruses; Applicant is required to elect **one virus** from **HIV, Ebola, and influenza** listed in claims 9, 12, 29, 31, and 40.
4. Restriction is required between agents that are used to interfere with the activity of the host proteins: **a transposon, siRNA or an anti-protein binding agent.**
5. Restriction is required between sequences being administered in the present method; Applicant is required to elect **one sequence from SEQ ID NO: 246-845** recited in claim 68.

If a host protein **Rab9** is elected Applicant is further required to elect one pathogen from:

Campylobacter jejuni, Vibrio cholerae, SV40, Legionella pneumophila, Aeromonas hydrophilia, Echovirus 1, Echovirus 11, Brucella spp, Clostridium spp., Avian sarcoma and leukosis virus, FimH, Escherichia coli, Streptococcus pyogenes, Semiliki forest virus, Salmonella typhimurium, Bacillus anthracis, Ecotropic mouse leukaemia virus, Shigella flexneri, Bacillus thuringiensis, HTLV-1, Chlamydia spp., Helicobacter pylori, HIV-1, Mycobacterium spp., Listeria monocytogenes, Ebola, Marburg, Measles, Herpes Simplex virus, influenza virus, or Epstein-Barr virus.

Thus each combination of a host cell protein together with a corresponding nucleic acid sequence, a specific virus, specific agent and nucleic acid sequences representing the administered agents is considered to represent a distinct invention.

Depending on Applicants election of different inventions appropriate claims will be examined. Applicant should point out which claims read on the elected invention. It is noted that this is not a species election.

II. Claims 43-50, encompass multiple groups of distinct inventions wherein each invention is drawn to a method of identifying a compound that decreases binding of a viral protein to **one host protein in Table 1**.

1. Restriction is required to elect **one host protein** from Table 1.
2. Restriction is required to elect **one sequence from SEQ ID NO: 1-227**.
3. Restriction is required to elect one virus from **HIV, Ebola, and influenza**.

It is noted that the elected protein must correspond with the elected sequence and the virus (according to Table 1).

Each combination of a host cell protein together with a corresponding nucleic acid sequence, and specific virus, is considered to represent a distinct invention.

Depending on Applicants election of different inventions appropriate claims will be examined. Applicant should point out which claims read on the elected invention. It is noted that this is not a species election.

III. Claims 60, 63, 64, and 67, are drawn to a non-transgenic mammal comprising a functional deletion of one or more target sequences.

If the invention of claims 60, 63, 64, and 67 is elected further restriction is required to elect one sequence from SEQ ID NO: 1-232. It is noted that this is not a species election.

The above inventions do not relate to a single general inventive concept under PCT Rule 13.1 because they lack the same or corresponding special technical features for the following reasons: The host proteins and the nucleic acid sequences of SEQ ID NO: 1-846 lack a shared technical feature because they are distinct structurally and functionally, and they do not belong to one common art recognized group of proteins. The host proteins are unrelated. Furthermore the viruses such as HIV, Ebola, and influenza as well as the pathogens listed in claim 53 are distinct viruses that belong to separate virus families and do not share common technical features with regard to either the virus structure or its pathogenicity. The agents such as a transposon, siRNA or an anti-protein binding agent do not share a common technical feature because they are distinct structurally and have different modes of operation.

Since Applicant's inventions do not share a technical feature they do not have a single inventive concept and thus the claims lack unity of invention. Therefore, the instant invention lacks Unity of Invention and restriction is set forth as it applies to U.S. practice.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agnieszka Boesen whose telephone number is 571-272-8035. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce Campell can be reached on 571-272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Agnieszka Boesen, Ph.D./  
Examiner, Art Unit 1648